REMARKS/ARGUMENTS

Claims 1-22 remain in this application. Claims 1 and 3 have been amended.

§ 103 Rejections

Applicants respectfully traverse the rejection of claims 1-21 under 35 U.S.C. § 103(a) as being unpatentable for obviousness over U.S. Patent No. 6,546,757 (Morse) and U.S. Patent No. 5,622,750 (Kilian et al), U.S. Patent No. 3,785,722 (Schultz et al), or U.S. Patent No. 3,806,570 (Flamenbaum).

Morse discloses a liquid spray pyrolosis method for making optical fiber performs. There is no mention or suggestion in Morse of how to consolidate a soot blank to form a tantalum doped preform which does not have unsuitable amounts of crystallization in the preform. In fact, there does not appear to be any description at all of how the preform is consolidated in Morse.

Kilian discloses a method for making films on substrates involving flame reaction of an aerosol. Again, there is no mention or suggestion of how to consolidate optical fiber preform to avoid crystallization, as applicants' invention is directed. In fact, there is not even any description of making an optical fiber preform. Instead, Kilian is directed to the formation of thin films. According to the Examiner, "Kilian teaches that crystallization can be prevented by removal of OH, i.e., dehydration, see column 7 and 8." The portion of the Kilian reference referred to by the Examiner indicates that the thin film formed by the method of Kilian should be dried in pure oxygen at a lower temperature (typically at 500° C) and that only after this drying procedure can the temperature be raised to the temperature where sintering yields consolidated soot. Again, there is no description of how to consolidate an optical fiber preform under conditions suitable to prevent crystallization. Furthermore, there is certainly no description of utilizing the temperatures and other conditions set forth in claims 2 and 3 and claims dependent therefrom. In fact, if anything, the description in the Kilian patent clearly teaches away from the temperature ranges used by applicants, indicating that the key step in preventing crystallization is done at a lower temperature (typically at 500° C).

Schultz discloses a method for making glass color filters which are typically used as traffic signals, color grating of materials, and sunglasses (column 1, lines 6 through 11). Again, there is no mention or description in Schultz of how one should make an optical fiber preform using tantalum doping and how to consolidate that preform to avoid crystallization. According to the Examiner, "Schultz teaches that seed formation and crystallization is prevented by heating to a suitable temperature". First, there is no mention or suggestion in Schultz that by heating to any temperature, crystallization can be prevented, particularly in optical fiber performs. Instead, Schultz deals with formation of melt glasses, i.e., glasses which are formed by melting several types of constituent glasses that have already previously been consolidated. One skilled in the art of making optical fiber would not look to references dealing with formation of glass melts for inspiration on how to avoid crystallization in optical fiber performs which are formed by first depositing soot via chemical vapor deposition.

Flamenbaum discloses a method for producing fused silica blanks which can be used to make optical fiber. While Flamenbaum does make a general statement that soot performs may be consolidated at temperatures in excess of 1400° C, and also that a wide variety of dopants can be utilized including germanium, phosphorous, tantalum, titanium, aluminum, tungsten, malibdanum, borrilium, and niobium, there is no mention or suggestion in Flamenbaum on how or at what temperatures one should consolidate a tantalum doped optical fiber preform in order to avoid crystallization.

Taken as a whole, there does not appear to be any clear description in any of the references cited by the Patent Office, either taken alone or in combination, of the conditions that would be suitable for consolidating a soot blank made of Ta_2O_5 and silica such that crystallization of the blank can be avoided.

With respect to claim 2, there is certainly no description in any of the references disclosed by the Examiner of exposing a Ta_2O_5 doped soot blank to an atmosphere comprising helium and heating the blank to a temperature greater than 1550° C.

With respect to claim 3, there is no description in any of the references cited of exposing a Ta_2O_5 doped soot blank to a vacuum atmosphere and heating the soot blank to a temperature greater than 1450° C to avoid crystallization.

Applicants have considered the additional prior art made of record but not relied upon by the Patent Examiner, and it is submitted that the additional art is no more pertinent than the art relied upon by the Examiner in the rejection.

Based upon the above amendments, remarks, and papers of records, applicant believes the pending claims of the above-captioned application are in allowable form and patentable over the prior art of record. Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Applicant believes that no extension of time is necessary to make this Reply timely. Should applicant be in error, applicant respectfully requests that the Office grant such time extension pursuant to 37 C.F.R. § 1.136(a) as necessary to make this Reply timely, and hereby authorizes the Office to charge any necessary fee or surcharge with respect to said time extension to the deposit account of the undersigned firm of attorneys, Deposit Account 03-3325.

Please direct any questions or comments to Robert L. Carlson at 607-974-3502.

Respectfully submitted,

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